

K (m/d)	K (m/s)	h	Ro	Quarry Radius (m)	Pumping Rate - Q (m ³ /day)	Pumping Rate - Q (l/s)
2.7	3.13E-05	4.5	75	75	247	2.9
10	1.16E-04	4.5	145	75	591	6.8
25	2.89E-04	4.5	230	75	1,135	13.1
50	5.79E-04	4.5	325	75	1,901	22.0
100	1.16E-03	4.5	459	75	3,241	37.5
2.7	3.13E-05	6.5	109	75	399	4.6
10	1.16E-04	6.5	210	75	995	11.5
25	2.89E-04	6.5	332	75	1,963	22.7
50	5.79E-04	6.5	469	75	3,349	38.8
100	1.16E-03	6.5	663	75	5,805	67.2
2.7	3.13E-05	11	184	75	827	9.6
10	1.16E-04	11	355	75	2,177	25.2
25	2.89E-04	11	561	75	4,445	51.4
50	5.79E-04	11	794	75	7,760	89.8
100	1.16E-03	11	1123	75	13,722	158.8

$$Ro = C.h.\sqrt{k}$$

Ro = Drawdown Radius

C = flow factor (assumed at 3000 for radial flow)

h = drawdown (m)

k = hydraulic conductivity (m/s)

$$Q = B.k.(S_x^2 - S_y^2) / \log_e(R/r)$$

Q = Ingress Rate (m³/day)

B = 3.142

k = hydraulic conductivity (m/d)

Sx = aquifer thickness (m) before drawdown

Sy = remaining aquifer thickness (m) during drawdown

R = Radius of quarry (r) + Radius of influence (Ro) (m)

r = radius of quarry

K (m/d)	K (m/s)	h	Ro	Distance to Nearest Edge of Cell 6 - R (m)	Ro:R	ho/h (%)	ho (m)	Reference GWL - SK02 (mAOD)	ho (mAOD)	Minimum GW Elevation to maintain Hydraulic Containment Conditions in Cell 6 (mAOD)
2.7	3.13E-05	4.5	75	40	53%	17	0.765	24.5	23.74	21.95
10	1.16E-04	4.5	145	40	28%	30	1.35	24.5	23.15	21.95
25	2.89E-04	4.5	230	40	17%	42	1.89	24.5	22.61	21.95
50	5.79E-04	4.5	325	40	12%	50	2.25	24.5	22.25	21.95
100	1.16E-03	4.5	459	40	9%	58	2.61	24.5	21.89	21.95
2.7	3.13E-05	6.5	109	40	37%	24	1.56	26.5	24.94	21.95
10	1.16E-04	6.5	210	40	19%	40	2.6	26.5	23.9	21.95
25	2.89E-04	6.5	332	40	12%	50	3.25	26.5	23.25	21.95
50	5.79E-04	6.5	469	40	9%	58	3.77	26.5	22.73	21.95
100	1.16E-03	6.5	663	40	6%	68	4.42	26.5	22.08	21.95
2.7	3.13E-05	11	184	40	22%	36	3.96	31	27.04	21.95
10	1.16E-04	11	355	40	11%	50	5.5	31	25.5	21.95
25	2.89E-04	11	561	40	7%	62	6.82	31	24.18	21.95
50	5.79E-04	11	794	40	5%	70	7.7	31	23.3	21.95
100	1.16E-03	11	1123	40	4%	72	7.92	31	23.08	21.95

K (m/d)	K (m/s)	h	Ro	Distance to Western Edge of Cell 6 - R (m)	Ro:R	ho/h (%)	ho (m)	Reference GWL - SK01 (mAOD)	ho (mAOD)	Minimum GW Elevation to maintain Hydraulic Containment Conditions in Cell 6 (mAOD)
2.7	3.13E-05	4.5	75	95	0%	0	0.0	22	22.00	21.95
10	1.16E-04	4.5	145	95	65%	11	0.5	22	21.51	21.95
25	2.89E-04	4.5	230	95	41%	21	0.9	22	21.06	21.95
50	5.79E-04	4.5	325	95	29%	30	1.4	22	20.65	21.95
100	1.16E-03	4.5	459	95	21%	39	1.8	22	20.25	21.95
2.7	3.13E-05	6.5	109	95	87%	3	0.2	24	23.81	21.95
10	1.16E-04	6.5	210	95	45%	19	1.2	24	22.77	21.95
25	2.89E-04	6.5	332	95	29%	30	2.0	24	22.05	21.95
50	5.79E-04	6.5	469	95	20%	39	2.5	24	21.47	21.95
100	1.16E-03	6.5	663	95	14%	56	3.6	24	20.36	21.95
2.7	3.13E-05	11	184	95	51%	18	2.0	30	28.02	21.95
10	1.16E-04	11	355	95	27%	31	3.4	30	26.59	21.95
25	2.89E-04	11	561	95	17%	43	4.7	30	25.27	21.95
50	5.79E-04	11	794	95	12%	51	5.6	30	24.39	21.95
100	1.16E-03	11	1123	95	8%	61	6.7	30	23.29	21.95

K (m/d)	K (m/s)	h	Ro	Distance to Nearest Edge of Cell 1 - R (m)	Ro:R	ho/h (%)	ho (m)	Reference GWL - SK04 (mAOD)	ho (mAOD)	Minimum GW Elevation to maintain Hydraulic Containment Conditions in Cell 1 (mAOD)
2.7	3.13E-05	4.5	75	160	0%	0	0.0	32	32.00	31.87
10	1.16E-04	4.5	145	160	0%	0	0.0	32	32.00	31.87
25	2.89E-04	4.5	230	160	70%	9	0.4	32	31.60	31.87
50	5.79E-04	4.5	325	160	49%	19	0.9	32	31.15	31.87
100	1.16E-03	4.5	459	160	35%	25	1.1	32	30.88	31.87
2.7	3.13E-05	6.5	109	160	0%	0	0.0	33	33.00	31.87
10	1.16E-04	6.5	210	160	76%	9	0.6	33	32.42	31.87
25	2.89E-04	6.5	332	160	48%	19	1.2	33	31.77	31.87
50	5.79E-04	6.5	469	160	34%	25	1.6	33	31.38	31.87
100	1.16E-03	6.5	663	160	24%	34	2.2	33	30.79	31.87
2.7	3.13E-05	11	184	160	87%	3	0.3	34.7	34.37	31.87
10	1.16E-04	11	355	160	45%	19	2.1	34.7	32.61	31.87
25	2.89E-04	11	561	160	29%	22	2.4	34.7	32.28	31.87
50	5.79E-04	11	794	160	20%	39	4.3	34.7	30.41	31.87
100	1.16E-03	11	1123	160	14%	48	5.3	34.7	29.42	31.87

K (m/d)	K (m/s)	h	Ro	Distance to Nearest Edge of DMC LFS - R (m)	Ro:R	ho/h (%)	ho (m)	Reference GWL - SK03 (mAOD)	ho (mAOD)
2.7	3.13E-05	4.5	75	125	0%	0	0.0	26.5	26.50
10	1.16E-04	4.5	145	125	86%	2	0.1	26.5	26.41
25	2.89E-04	4.5	230	125	54%	13	0.6	26.5	25.92
50	5.79E-04	4.5	325	125	38%	23	1.0	26.5	25.47
100	1.16E-03	4.5	459	125	27%	32	1.4	26.5	25.06
2.7	3.13E-05	6.5	109	125	0%	0	0.0	28	28.00
10	1.16E-04	6.5	210	125	60%	12	0.8	28	27.22
25	2.89E-04	6.5	332	125	38%	23	1.5	28	26.51
50	5.79E-04	6.5	469	125	27%	32	2.1	28	25.92
100	1.16E-03	6.5	663	125	19%	39	2.5	28	25.47
2.7	3.13E-05	11	184	125	68%	10	1.1	29.7	28.60
10	1.16E-04	11	355	125	35%	25	2.8	29.7	26.95
25	2.89E-04	11	561	125	22%	36	4.0	29.7	25.74
50	5.79E-04	11	794	125	16%	44	4.8	29.7	24.86
100	1.16E-03	11	1123	125	11%	55	6.1	29.7	23.65